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ABSTRACT

In a longitudinal study of a 1939-40 birth cohort of Michigan men, the educational, occupational, and earnings costs of discontinuous patterns of school attendance over the life cycle were examined. The intracohort analysis aimed to identify plausible causal antecedents and consequences of discontinuities in schooling in the context of the cohort's socioeconomic life cycle. Men who either had delayed postsecondary schooling after leaving high school or had interrupted postsecondary matriculation achieved fewer years of total schooling than those who experienced continuous enrollment, controlling for socioeconomic origins, educability, and aspirations. Moreover, men undertaking nonregular (noncollege) forms of postsecondary schooling completed fewer (certification) years of school than did college enrollees, after taking into account differential periods of school attendance and the varying social origins, educabilities, and aspirations of these men. For men who completed equivalent levels of education, the college matriculant secured a more prestigious first full-time job than did the nonregular school graduate. While educational discontinuities had no net impact on within-occupation earnings differences, men who had been age-grade retarded in high school earned less annually ($2,440) than did their statistical counterparts. (Author/JM)

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DISCONTINUITIES IN SCHOOLING AND THE SOCIOECONOMIC LIFE CYCLE

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ABSTRACT

In a longitudinal study of a 1939-40 birth cohort of Michigan men we examine the educational, occupational, and earnings costs of discontinuous patterns of school attendance over the life cycle. Men who either had delayed post-secondary schooling after leaving high school or had interrupted post-secondary matriculation achieved fewer years of total schooling than those who experienced continuous enrollment, controlling for socioeconomic origins, educability, and aspirations. Moreover, men undertaking non-regular (non-college) forms of post-secondary schooling completed fewer (certification) years of school than did college enrollees, after taking into account differential periods of school attendance and the varying social origins, educabilities, and aspirations of these men. For men who completed equivalent levels of education, the college matriculant secured a more prestigeous first full-time job than did the non-regular school graduate. While educational discontinuities had no net impact on within-occupation earnings differences, men who had been age-grade retarded in high school earned less annually ($2440) than did their statistical counterparts.

To the demographer, time is critically important. Time, or age-time relationships, constitute the very core of the concept of a population (Ryder, 1964). For the individual, date of birth is the benchmark against which personal growth and maturation are evaluated, as age has normative significance as a criterion for gauging the appropriateness and value of behaviors vis-a-vis the social group. Date of birth also serves to link the person to the social group, or that part of it--the (birth) cohort--which experiences the same events within the same historical time interval (Ryder, 1965:845). This linkage to the cohort bears upon the individual, for it moulds behavior to historical circumstances and to the aggregate, structural circumstances of the member's (birth) cohort. Therefore, behaviors indexed by an individual's age manifest patterns appropriate to that stage in the life cycle as these behavioral norms have been temporized by history.[1]

Age is a variable with two analytical edges: It can be used to cut a population (sample) into birth cohorts, and it can be employed to disect the passage of historical time for a given birth cohort into sequences of relatively homogeneous social experiences, or into stages of the life cycle. From the comparison of birth cohorts--intercohort analysis--the demographer ascertains social change, subject to the ability to hold constant the effects of maturation (age). From the comparison of behaviors or experiences of individuals at different ages, or stages of the life cycle--intracohort analysis--the demographer discovers the course of maturation and defines the nature of the life cycle, subject to the ability to control for history (time period).

In this paper, we trace the experience of a birth cohort of males as its members leave high school, complete their schooling in colleges and

other institutions, and/or undertake their post-educational occupations. Our intracohort analysis aims to identify plausible causal antecedents and consequences of discontinuities in schooling--age-grade retardation and temporary drop-outs both prior to post-high school education and subsequent to college or business-vocational-technical school metriculation--in the context of the cohort's socioeconomic life cycle (Duncan, 1967).

Figure 1 about here

Figure 1 illustrates the sequence of major social statuses over the course of a person's life cycle, and students of social inequality and stratification often refer to this sequence of relationships in the socioeconomic life cycle as "the process of achievement," or "the status attainment process." Such labels, which emphasize the achieved nature of educational, occupational, and economic statuses, are accurate insofar as socioeconomic inequalities among families (e.g. heads' occupational prestige levels, heads' education, family incomes) are not highly associated with the scoioeconomic statuses of their offspring (e.g. sons' schooling, occupational statuses, earnings). In industrial societies such as the United States, Great Britain, Australia, and Canada for which there are data, the product-moment correlations between paternal and filial socioeconomic statuses are in the range 0.2 to 0.4, indicating that only 4% to 16% of the social inequalities of the sons' generation stem from socioeconomic inequalities among their parents.

Moreover, the relationships among the sons' major status dimensions--occupational prestige, education, and earnings--are far less than deterministic. The highest correlation, between educational and occupational

levels, r=0.6 in the U.S., denotes that only about one-third of occupational prestige inequalities among men are associated with their educational inequalities. Achievement, or lack of it, on one dimension of social standing does not guarantee achievement (or preclude it) on another, although in all industrial societies one tends to find significant positive relationships between the statuses over the life cycle.

While the socioeconomic life cycle is largely organized by the principle of achievement, and substantial opportunity for between-generation and career mobility appears to characterize the stratification system in the U.S., there are notable handicaps preventing perfect mobility. First, the modest dependence of sons' schooling upon their families' socioeconomic circumstances, the sizes of their sibships, their regions of residence during child-rearing and other factors is well documented by the national study of the process of achievement in 1962 by Peter M. Blau and Otis Dudley Duncan (1967). Furthermore, the Blau-Duncan study revealed small but significant direct effects of paternal occupational status on sons' occupations, even among sons of equivalent schooling. Clearly, not all men born into all families face the same probabilities of equal success, but the degree to which family background shapes the course of achievement and defines the level of attainment is not great.

All persons are exposed to the risks of birth into families where the head is poorly educated, underemployed, or reproductively prolific. Yet the socioeconomic statuses ascribed to an individual by such accidents do not accumulate over the life cycle, since the handicap of a father with low human capital does not ordinarily imply a similar fate for the offspring.

However, persons born into black families face handicaps of racial discrimination: A black man must be better educated than his white counterpart to reap the same economic return for the same work. Inasmuch as the average black male is born into a family where the head's socioeconomic statuses are lower than those of the average white male, the black suffers the double handicap of racial discrimination in the form of generally poorer returns to human capital--a handicap which does accumulate over his life cycle--and of lesser socioeconomic resources for achievement within his family of orientation.

For the male population as a whole, the inequalities of socioeconomic status among families, whether evaluated as large or small, are not by and large transmitted between generations; opportunities for (upward) social mobility between generations and socioeconomic achievement in one's own career are generally available. Yet racial inequality of opportunity in the U.S. attenuates upward mobility for blacks, relative to whites, and handicaps their abilities to convert their own human capital into achievements on a par with whites. Whether similar inequality of opportunity based on gender pervades the American process of achievement is a matter of some speculation, but little data are available by which to assess these suppositions (cf. N. Carter, 1972).

This discussion of inequality of status, of the stratification of inequalities (i.e., the extent to which inequalities of one generation persist into the next, which indexes the degree of opportunity for achievement), and of inequality of opportunity we would extend to cover the topic of this paper: inequality of achievement, stemming from life cycle discontinuities.

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We accept the insight of Beverly Duncan (Duncan, Featherman, and Duncan, 1972:224) that the timing of some events in the life cycle can be as critical for the individual as the events themselves. In using the term 'discontinuities," we refer to those events of timing within the experience of a birth cohort which differentiate the otherwise homogeneous histories of its individual members.[2] Discontinuities of interest for this paper are those affecting components of the socioeconomic life cycle, either by facilitating or handicapping cohort members as they proceed through school, enter the labor market, and compete for wages and salaries.

One important discontinuity for a substantial minority of any cohort involves interruption in the course of schooling. "Evidence is accumulating that the transition from student to worker is not an irreversible change in status which can be dated with precision. The transition seems rather to occur over a period of some years during which young men mix work experience with formal training, often interrupting both to fulfil a military obligation" (B. Duncan, 1967). Through an ingenious analysis of information on age at first full-time job and years of completed schooling in the national survey, "Occupational Changes in a Generation (OCG)," Beverly Duncan estimated that "as many as a tenth of the high-school graduates, a third of those with some college training, and a quarter of the college graduates did interrupt their schooling at some point" with labor force activity, and "a sixth of the tennage boys who left school may have returned for additional training" (B. Duncan, 1965b:131).

In a national sample of men aged 30-39 in 1968, Ornstein (1971:366) finds a greater frequency of interruption than is estimated by Duncan.[3]

For white men entering the labor force (for at least a period of seventeen months), having just completed high school, 34.0% returned to school within a period of eight years; for those with some college, 28.9% returned; for tnose with a college diploma, 16.5% continued after lengthy labor force attachment. Overall (including those with less than a high school certificate) the "dropouts who went back" within eight years after entry into the labor force comprised 26.8% of the white men; the figure for blacks was 11.6%.

Finally, women as well as men experience discontinuity in schooling. Davis (1973) estimates that over one-fifth of the ever-married women in the U.S. in 1970 continued their educations after marriage. For women who entered their first marriages less recently, the majority continued schooling after ten or more years of marriage; women more recently married apparently returned to or continued schooling after shorter post-nuptial discontinuities.

The timing of education within the life cycle of an individual (and within those of different birth cohorts, cf. B. Duncan, 1968:626-634) is variable, thereby differentiating the otherwise homogeneous history of the cohort. Not only are there interruptions in education once underway, but age at school entry also varies, especially across geographical regions. Coupled with pervasive patterns of migration, these two discontinuities yield yet a third--age-grade retardation or acceleration of the school-age migrant child, as measured against the prevailing norms of the receiving community (B. Duncan, 1968:631). While documentation of the prevalence of these discontinuities accumulates, we hold little knowledge of their causal antecedents and their impact on socioeconomic achievements.

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In the OCG data for white men of nonfarm background (i.e. paternal occupations were nonfarm), Beverly Duncan concluded that "elements of the family's structure and status which are conductive to high educational attainment also are conducive to continuity in schooling" (Duncan, Featherman, Duncan, 1972:219). Early job takers (i.e., OCG men identified as having temporarily interrupted schooling with civilian labor force activity) were disproportionately drawn from larger families in which the head was less well educated and was employed in a lower status occupation. Moreover, special Census tabulations for 1960 revealed a positive association between the educational level of family head and a younger age at school entry for the child (B. Duncan, 1968:631-634). Among college graduates in the OCG survey, early job takers were selectively recruited from lower status families and from large sibships wherein the older brothers attained less schooling than in the families of later job takers. Early job takers in turn married at younger ages and obtained first full-time civilian jobs of lower socioeconomic rank than did other college graduates. However, the socioeconomic status of current (1962) occupations for early job takers was but slightly below that for other graduates, an average difference of a tenth of a standard deviation (roughly a two-point difference on a scale from 1-100). For these men, temporary schooling interruptions were correlated with less than average intergenerational mobility to first jobs, but disproportionate upward career mobility to current job. On balance, however, educational discontinuity was moderately associated with diminished occupational status attainments. In all, educational discontinuities of this type add to the dispersion of occupational achievements, increasing the socioeconomic inequality within a birth cohort over its career.

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To explore further the causal nexus involving temporary interruptions in schooling we have collected panel data from a cohort born between July 1, 1939 and June 30, 1940, some 88% of which was still in school at age seventeen. The sample of 17-year-old men drew from all high schools in Lenawee County, Michigan in 1957; documentation on the population and sample coverage appears elsewhere (Otto, 1973). A second interview, conducted largely by telephone in 1972, contacted 82.3% of the 430 eligible men from the original panel (N=442) and yielded 340 usable cases with two-wave data, a response rate of 79.1% and covering 76.9% of wave one cases.

Our interest focuses upon three measures of discontinuity in schooling. The first, age-grade retardation at age 17, was indexed by assuming the cohort enrollment norm to be grades 11 or 12. If a young man was enrolled at age 17 in grades 8 through 10, he was considered retarded for our purposes, and on a dichotomy was scored "1" rather than "0." Some 9.4% of the working sample was retarded. A second discontinuity entailed a temporary gap of six months or more between date of exit from high school and entrance into any post-secondary education, either in colleges or as business, vocational, technical or apprenticeship training in non-regular schools. If such a delay in post-high school education occurred, and it did for 20.2% of the working sample, the respondent was scored "1" on a dichotomy. Finally, the third discontinuity identified an interruption of six months or more during the course of post-high school education. For the 22.3% experiencing such an interruption, a score of unity was registered on this dichotomy.

Table 1 gives a cross classification of the three discontinuities by the two types of post-high school training. Forty-one percent had no schooling beyond age 17, 8% had both college and some non-regular training,

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34% had at least some college but no other schooling, and 17% took non-regular schooling but did not enter college.[1] About 9% of our sample was age-grade retarded at age 17, and some 40% encountered either a delay prior to post-secondary education (19%) or an interruption (21%) once it was underway. Seventeen (5%) of the sample had both a delay and an interruption; this is 12% of those with both a delay and an interruption. There are few cases of age-grade retardation with either post-secondary schooling or further discontinuities beyond high school.

Table 1 about here

To interpret the impact of these discontinuities within the socioeconomic life cycle, we incorporate the three variables into a hypothetical model of the process of achievement. Figure 2 orders the variables of interest according to their assumed causal priorities, based upon the growing volume of research on the status attainment process (Blau and Duncan, 1967; Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1972; Duncan, Featherman, and Duncan, 1972). There are five major blocks of variables: socioeconomic background; educability and retardation; aspirations for achievement; post-high school discontinuities and duration of education; and socioeconomic achievements. Within each block, curved lines denote correlations and no causal priorities; straight arrows denote assumed causal priorities within the block; both within and between blocks we assume relationships are fully recursive for heuristic purposes.

Figure 2 about here

Socioeconomic Background

In Table A-1 of the appendix we find correlations among the predetermined status variables within the ranges expected from previous research (e.g. Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1972). Father's occupational status, in units of Duncan's (1961) socioeconomic status index (SEI), father's and mother's educations, in units of regular schooling[4], all are positively correlated. We consciously avoid creating an overall index of family socioeconomic level, allowing each potential component to affect the later blocks of variables in its individual manner, and we have included maternal education in view of some considerable speculation that, despite substantial assortative mating on education, maternal education uniquely shapes the educability and attainments of offspring (cf. Ellis and Lane, 1963; Carter et al. 1972). Each of these status indicators is negatively correlated with the number of R's siblings, rural residence, and farm background, which in turn are postively correlated with each other. Rural residence (scored "1" in a 0,1 dichotomy) characterizes 64% of the sample, who lived in places with populations below 2,500 in 1957. Farm background (scored "1" in a 0,1 dichotomy) indexes the 19% of boys whose father's occupations in 1957 were in farming (e.g. farmers, farm managers, farm foremen or laborers). In view of the percentages rural and farm, the lack of perfect correlation between these two characteristics (r=.35), and the variances in the background status indicators (see Table A-1) we argue that the sample is sufficiently heterogeneous to justify our inquiry. Since the origin of these fifteen correlations in block one is not problematic to our analysis, we proceed to block two variables.

Educability and Retardation

Within this block of variables we hypothesize that MA, mental ability (raw score on the Cattell Culture-Free test administered at wave one), will affect positively the grade point average at age 17 (Sewell, Haller, and Portes, 1969) and both MA and GPA will exert separate and negative influences on the probability of being in school and age-grade retarded (AGRTD). Moreover, we expect rural boys (Haller, 1968), boys with lower status parents (Sewell, Haller, and Portes, 1969), and boys with more siblings (Duncan, Featherman, and Duncan, 1972) to have lower mental ability. The parental status variables should affect GPA only through their correlation with MA (Sewell et al., 1969), the only hypothesized direct effect on GPA arising from MA. Finally, we expect no direct effects on AGRTD except from MA and GPA.

In Table 2 we find general confirmation of our expectations. Ordinary least squares regressions, both standardized and unstandardized appear in the table; coefficients whose absolute values exceed twice their standard errors are asterisked as statistically significant. Higher mental ability is indicative of young men from smaller families in which maternal education is higher; paternal status characteristics and the rural, farm variables are not as significant, although they tend to operate in the directions predicted. Boys with mothers whose educations differ by one year are separated by three-quarters of a point on the scale of mental ability, while those growing up in a (say) two- vs. three-child sibship are separated by one-quarter of an MA point. Since the MA scale is not normed, we would not make much of the unstandardized coefficients. Apparently, mother's education does play a significant and different role than father's socioeconomic status in shaping the intellectual ability of the son. Farmers' sons and rural boys are not substantially

handicapped in mental ability, when differentials in maternal education, fertility, and parental SES are controlled.

Table 2 about here

While mental ability emerges as the most dominant causal antecedent of GPA, both mother's education and paternal occupational status affect GPA directly. Some 61% of the causal effect of maternal education is direct, while roughly 39% influences GPA through MA. Again, the effective role of mothers in nurturing the educability of their sons is manifest. Paternal socioeconomic status also affects GPA directly; approximately 87% of the causation is direct, inasmuch as the role of socioeconomic factors in moulding MA is minor in these data. This set of relationships involving socioeconomic factors was not anticipated, as Hauser (1973) finds virtually no socioeconomic variance in GPA once MA is controlled. (We hasten to add that Hauser's analysis is based on a different specification for the effects of status components on academic performance and uses different methods than we.) Clearly the bulk of the variance explained in GPA by our model stems from ability, 58% of $R^2 = .28$, and boys with fathers differing by 10 socioeconomic index (SEI) points have GPAs separated by .5 points (GPA scaled on the traditional 4-point system).

From the reduced-form equations, first, for the socioeconomic background regressors on AGRTD, and second, for block one plus MA as a regressor on AGRTD, we observe that maternal education affects son's schooling retardation through his mental ability. In turn, the MA component of AGRTD is largely incorporated within the boy's academic performance, or GPA. Thus, we observe no direct effects of any block one regressors on AGRTD, as predicted. While

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nearly half of the explained variance (R^2=.12) in AGRTD arises from the negative, direct effects of academic performance, the hypothesized direct effect of MA is not significant. Age-grade retardation in high school, for this cohort, is a reflection of poor academic performance. However, the overwhelming bulk of variance in this discontinuity is unresponsive to the factors included in our model.

Achievement Aspirations

In turning to block three variables, educational and occupational aspirations, we hypothesize that school retardation among 17-year-old enrollees will imply lower goals for education and occupational status, ceteris paribus. Our measure of occupational aspiration is the Haller and Miller OAS scale (Haller and Miller, 1971); educational aspiration (EASP) is indexed by units of college planned.[5] We expect positive effects for parental socioeconomic characteristics to attenuate under controls for mental ability and GPA. Likewise, the negative effects of rural rearing and farm background are expected to diminish when educability is controlled. No net effect of siblings is predicted, and no effect of MA net of GPA is anticipated. If our results are to parallel Sewell's Wisconsin data (Sewell, Haller, and Ohlendorf, 1970), we would expect GPA and parental status variables to be the prime causal antecedents of these two (correlated and not causally related) aspiration variables.

Taking first the regression results in Table 3 for educational aspirations, we find (in the reduced-form equations) again the positive force of maternal education in raising son's aspirations. Her impact stands apart from that of father, whose education plays a far lesser role and whose

socioeconomic level of occupation is reflected positvely in son's educational goals. Aside from the status characteristics of father's job, whether the father farms or not does not seem crucial. However, whereas we had expected farmers' sons to have lower educational goals, the net effect (although not quite significant by our standard) is positive. Rural residence during rearing is associated with lower educational aspirations. Taken together the socioeconomic factors (all of block one) account for 22% of the variance in EASP.

Adding mental ability to the equations for EASP adds 3% to R^2, and adding GPA raises R^2 by another 15%. Of the two educability variables, GPA is the more important and by itself it accounts for one-third of R^2. While boys with greater MA and better grades set higher aspirations, the two educability factors substantially reduce most effects of parental characteristics on sons' EASP. About half of the causal effects of paternal occupational status and maternal education is not directly related to EASP but is channeled through MA and GPA. However, mother's education retains a positive net impact on son's aspirations. Educability factors do not affect the significant decrement in EASP stemming from rural residence.

Finally, age-grade retardation has no significant net negative effect on educational aspirations, and therefore its inclusion in the set of regressors does not alter the previous discussion of socioeconomic background and educability effects.[6] Additionally the expectation of no direct effect on MA on EASP was not confirmed, although about one-third of MA's causal effect is indirect through GPA. Grade-point average, mental ability, rural residence, and maternal education are the major factors with direct bearing on EASP.

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Table 3 about here

Maternal education and, to a lesser extent, paternal education are the only statistically important family factors to shape occupational aspirations. While rural rearing and paternal occupational level were effective in shaping EASP, apparently they are not critical for all achievement aspirations. Each of MA and GPA, when added to the reduced-form equations, increments R^2 by .11, but GPA carries about half of the effect of mental ability to OAS. Since maternal education is much a part of her son's MA and GPA, it is not surprising to observe the 50% diminution of her causal effect on OAS under controls for educability factors, and therefore its positive effect is not altered greatly when controlling block two components. Age-grade retardation displays a statistically non-significant negative effect on OAS. Being age-grade retarded implies an average decrement on the OAS of 3.20 points, net of other factors. This is roughly equivalent to a decrement suffered by having a father with some high school versus one with a college degree or graduate schooling.

We would conclude from Table 3 that AGRTD is not a major factor in the socioeconomic attainments of our sample, at least not as mirrored in achievement aspirations. Additionally educational and occupational aspirations appear to respond to somewhat different sets of causal antecedents, although the role of maternal education is as importnat to both EASP and OAS as to educability.[7]

Post-High School Discontinuities and Duration of Education

Next we consider the two post-high school discontinuities--delay in

post-high school training (DPHS) and post-high school interruption (PHSI);[8] the pertinent regressions appear in Table 4. On the basis of the analysis of OCG men reported by B. Duncan, we would expect the socioeconomic factors in block one to affect negatively each discontinuity, and the sibling variable to have a positive effect. Aside from these anticipations, we have no predictions. In the first row of Table 4, we find no statistically significant effects on DPHS from any socioeconomic factor, although the predicted direction is observed for FAOCC whose beta coefficient is just below the significance criterion. In fact none of the causal factors prior to the delay variable predicts this discontinuity; $R^2 = .03$ in row two. Of course, one cannot have a delay without going on for some form of schooling beyond age 17. When we introduce two dummy variables for whether or not a man undertook college or some other, non-regular schooling, these dummies explain about 26% of the variance in DPHS (row 3 of Table 4).

Table 4 about here

An interruption in schooling, after post-high school education is underway, has little to do with socioeconomic background, despite the fact that PHSI, like DPHS, is confounded with educational achievement. Only 8.5% of the variance in PHSI is explained by block one regressors, with the positive effect of maternal education being the only significant coefficient. The confounding with educational achievement makes the significant effects of GPA and then of EASP (in rows 5 and 6) difficult to interpret. We take the regressions in row 7 to be diagnostic: Given that an individual goes beyond high school, socioeconomic factors, educability, age-grade retardation, and achievement aspirations tell us little of his probability of doing so without

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an interruption. We note in passing that a young man entering college is somewhat more likely to encounter reasons for dropping out temporarily than his counterpart undertaking non-regular schooling, ceteris paribus.

In the last panel of Table 4 (rows 8-10) we examine the duration of education. Our variable, DURED, is the total number of calendar years between age at high school exit and age at exit from the highest grade; the mean of DURED is 3.9 years, $\pm$ 4.45 years. Later, we employ DURED as a measure of efficiency of education, for the present we seek to discover what permits or limits lengthy periods over which education is extended. Clearly, DURED is confounded with educational attainment, and that fact obscures the meaning of regressions in rows 8 and 9 of Table 4. We do not show the results for equations with block one only and with blocks one and two regressors. Of block one, only HOED affects (positively) DURED directly (R^2 = .06), but this direct effect disappears under controls for (primarily) GPA, and group two regressors raise R^2 to .18. Age-grade retardation has no direct effect on duration; one might have anticipated otherwise, although we observed earlier the slight causal influence of GPA on AGRTD. An additional 5% of explained variance stems from the aspiration variables (row 8), largely EASP, and the introduction of aspirations diminishes the still significant direct effect of GPA by 58%.

The two discontinuities, DPHS and PHSI, expectedly affect DURED positively. Beta coefficients for these discontinuities are the largest in row 9, and the two factors increment R^2 by .40, but also attenuating the still substantial direct effect of educational aspirations.

To offset partially the confounding of DURED by years of school completed, we introduce two dummy variables NREG and COLTN to index who

has some form of post-secondary education. (Note that the coefficients for NREG and COLTN essentially are deviations from the omitted category, "no post-secondary education.")[9] These two variables account for an additional 12% of variance in DURED, but their addition allows us to interpret the antecedents of DURED more clearly. Extension of schooling over lengthy periods naturally reflects periods of non-attendance, such as DPHS and PHSI; each of these discontinuities extends age at last grade attended (net of other factors) by about three years (see regression coefficients in row 10 of Table 4). Moreover, enrollment in post-secondary schools also protracts the age of the man in the last year attended, each by 3 to 4 years, net other factors. But controlling for periods of enrollment and intervals of delay and interruption, those who are older when finished with schooling are those with better grades in high school and with lower status families. Perhaps in interpreting the latter results, we can say that those who take longer to finish up are those whose family resources (e.g. FAOCC) do not permit continuous schooling but whose educability (e.g. GPA) permits them to continue on to the next grade with encouragement that educational goals can be achieved ultimately. Such an interpretation is consistent with B. Duncan's analysis of the social characteristics of OCG men who presumably interrupted their educations with periods of labor force activity. (We have not constrained our "dropouts" to take jobs, nor can we decompose DURED into labor force and other activities completely exhaustive of time in the interval.)

We would depart momentarily from our progression through the recursive causal model in Figure 2 to examine factors predictive of which type of post-secondary education a man enters--college (two- or four-year institutions leading to an academic degree) or non-regular schooling (vocational, technical, business, apprenticeship).

Table 5 about here

Row one of Table 5 indicates that non-regular schooling after age 17 is characteristic of young men with father's employed in farming and those boys with lower educational aspirations. (However, R^2 = .055 for an unreported regression involving blocks one, two, and three regressors.) But the primary predictive factor is a delay between high school and non-regular post-secondary education; a secondary factor is the post-high school interruption. On the other hand, college attendance (row 2) is more likely among those with high educational goals, more prestigious occupations in mind, better grades, and having experienced at least one interruption in schooling after matriculation. Hence, non-regular schools appear to provide farm boys, those with lower educational goals, and those unable or unwilling to continue schooling beyond age 17 without delay, with post-secondary education. College, rather than non-regular schooling (or no post-secondary schooling at all) attracts the academically more proficient, those motivated to achieve higher statuses, and those vulnerable to an interruption in schooling beyond age 17. Neither college nor non-regular school attendance reflects family socioeconomic factors per se.

Socioeconomic Achievements

Returning now to our causal model, we come to the last block of variables--the socioeconomic achievements, including education, occupational status, and earnings. Education (EDTOT) is in years of school completed at the second interview, with periods of non-regular attendance converted into equivalent units of regular, academic schooling. Occupational status, as was father's occupation, is scored in units of Duncan's SEI scale, and income is R's total salaries and wages in 1971.

From earlier research on the status attainment process (cited previously), we expect a major impetus to higher education from educability, mainly GPA, and aspirations, especially EASP. We hypothesize that maternal and paternal education will not affect EDTOT directly but only through GPA and aspirations. A small, positive socioeconomic effect from FAOCC is expected. We argue that farm origins and rural residence ought not affect EDTOT directly, after controls for siblings (Featherman, 1971b) and aspirations and educability (Haller, 1968) are imposed. Our three discontinuity variables are hypothesized to affect EDTOT negatively, controlling for DURED and the other variables.

For the rationale for the last expectation we return to the concept of a cohort and the structure of the life cycle. We argue that experiences of delayed post-secondary schooling and temporary dropouts from post-secondary education handicap the individual from attaining additional training. In many ways, the curricular assumptions of higher education incorporate expanding knowledge at lower levels. As high schools, for example, begin teaching subjects heretofore taught to college freshmen, the curricula for college students is altered to assume enlarged sophistication. Additionally, if apparent intercohort rises in educability (GPA) and education signal real qualitative improvements, then the average against which the relative ranking of students is achieved alters the conditions for acceptable student performance from one period to the next. These and other observations about intercohort changes in education imply that those who temporarily delay or drop out of school, permanently drop out of their cohort. The school dropout who comes back competes against a younger cohort, a higher average GPA and more knowledgable peers. Insofar as age-grade norms are clear, the former dropout is older than that norm, at a different stage of the life

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cycle, perhaps preventing social integration into a supportive, academic peer network. Post-secondary discontinuities differentiate the birth cohort into quasi-populations (Ryder, 1964:453), increase educational inequality within that cohort, and handicap, educationally, cohort members who experience them.

Table 6 about here

The first regression in Table 6 holds few surprises for those familiar with the literature relating socioeconomic background to educational achievement. Each of FAOCC, FAED, and MOED make separate, positive contributions to EDTOT, while rural residence and number of siblings have negative effects. Farm background, while failing the criterion for significance is associated with higher net educational attainments, a finding not expected beforehand. The collection of block one regressors accounts for 23% of the variance in EDTOT. Of block two variables, both GPA and MA positively affect education, with about two-thirds of the causal effect of MA working through GPA (reduced-form equation not shown). Age-grade retardation has no significant, negative effect, although one was expected. Not only is an additional 25% of variance in EDTOT explained by educability, but also the educability variables diminish all of the previously significant effects of background, save for RURAL.

While our hypothesized indirect effects for socioeconomic factors are largely supported, there are some exceptions. In Table 6 row three regressions, aspirations are entered as regressors, and as expected, each has a significant positive coefficient; and the beta value for EASP is larger than for OAS. Indeed the significant negative coefficient (in row 2) for RURAL is attenuated by a third in row 3, but two-thirds of the causal effect

is direct; further statistical controls hardly affect the size of this coefficient. Moreover, in row 4 regressions, which enter the post-secondary education discontinuities, the negative coefficient for SIBS exceeds twice its standard error. Size of sibship persists as a negative direct effect, even in the full-model regressions (row 5).

We have predicted negative effects for DPHS and PHSI, but in the reduced form, row 4, the estimates are positive. Rather than interpret these regressions, we estimate the equations for row 5, in which the two dummy variables for type of post-secondary training, COLTN and NREG, and DURED are included. Earlier results showed that NREG was a function of DPHS; and COLTN, a function of PHSI. Additionally we control for DURED to separate the effects of differential attendance patterns for those enrolling in NREG vs. COLTN from the certification effects of these types of schooling. The major differences between rows 4 and 5 involve PHSI and DPHS, for each has a negative value, albeit only that for DPHS is significant. In metric units (unstandardized regressions), a delay prior to post-secondary education costs about a year of formal training relative to those not experiencing either a delay or an interruption after exit from high school.

Net of PHSI and DPHS, DURED indexes something like years of school enrollment. The large positive coefficient for DURED indicates that this is a major factor in explaining inequality in education, the longer you attend school, the more schooling qua certification you receive, ceteris paribus. For each year of attendance, you obtain roughly a third year more of formal credits (see raw regression coefficients). Those attending school for the same periods but undertaking different kinds of post-secondary schooling experience divergent achievements. College attenders achieve

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about a year and one-half more educational certification than those enrolled in non-regular schools for equal periods of time.

Finally, an expected positive effect from aspirations is observed, although only from OAS and not EASP; the causal effect of the latter is indirect, largely through COLTN. GPA at age 17 affects EDTOT directly, despite the fact that 45% of its causal effect operates through aspirations and an additional 25% is reflected in the discontinuity, attendance duration, and training-type variables. Lastly, these remain minor direct effects from RURAL, SIBS, and FARM, which run counter to the expectation of exclusively indirect effects of these background variables.

We conclude that educational discontinuities, especially post-high school delays, do in fact handicap members of a birth cohort who experience them and create additional educational inequalities among the cohort, but age-grade retardation does not alter educational inequalities in any direct way beyond age 17. We attribute the handicap of the "delayers" to disjunctions in the socioeconomic life cycle stemming from an individual's having dropped out of his cohort as it passed on through school and experienced a competitive handicap, upon return, among a younger cohort. The fact that in our data "delayers" and "interrupters" are not systemmatically selected from lower socioeconomic strata largely rules out this factor as an explanation for the educational handicap of delayers.

An unanticipated finding was the educational cost of post-secondary attendance at non-regular schools. While part of these results may be artifactual,[10] there is support for the observation that attendance of equal duration in non-regular institutions vs. colleges yields fewer certification benefits than for college metriculation. This interpretation holds for

men of similar socioeconomic origins, degrees of educability, career aspirations, and patterns of schooling discontinuities.

We continue within block five variables in our causal diagram (Figure 2) and analyze the impacts of the schooling discontinuities on occupational and economic statuses in early adulthood, i.e. up to R's age of 32. In view of the apparent reporting errors in the OCG information for R's first full-time civilian job subsequent to all schooling (B. Duncan, 1965: Chapter 5), our interview schedule was designed to elicit first job detail from only those who could have had such jobs (e.g. those not currently enrolled) and after obtaining dates for last school exit and year of start at first full-time civilian job.

Educational achievement should be the most substantial determinant of first job socioeconomic status, while parents' education and socioeconomic status should affect son's early career status through educability and aspirations (Sewell and Hauser, 1972). Grades influence educational level, but no direct effect on first job is anticipated. On the other hand, we expect a positive direct effect of occupational aspirations on first job attainments, net of educability, education, and socioeconomic background (Sewell, Haller and Ohlendorf, 1970). Finally, we hypothesize a net positive effect of DURED, controlling for the discontinuity variables, educational achievement, and prior factors. We reason that DURED is a measure of age at first job (under the statistical controls described above), as well as an indicator of the temporal duration of schooling. Men who take longer to earn a college degree (e.g. five-year engineering courses) often enter first jobs of higher social status. Moreover, it is plausible that maturity, when taking what are typically entry jobs in

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the post-education labor market, can be the basis for positive discrimination.

Table 7, row 1, contains the regressions which pertain to these conjectures and hypotheses. Indeed educational attainment is the dominant antecedent of first job status; for each grade of additional schooling, first job SEI is incremented 4.5 points. Occupational aspirations fail to affect first job directly, as it would appear that these causal effects operate through the encouragement of post-secondary education. However, boys with better grades at age 17 obtain more prestigious jobs upon finishing school; some 28% of the causal effect of GPA is direct upon FJOB, and for each increase of one point of GPA, FJOB level rises nearly four SEI points. The impacts of FAOCC, FAED and MOED are indeed indirect as expected, although the collinearity of MOED with other regressors (probably) forces what was a nonsignificant causal effect (not shown) to emerge as a small negative one. Rural background, however, extracts a cost of some 5.6 SEI points from rural boys as they enter first jobs. While this characteristic does affect FJOB directly, about half of its causal influence is indirect.

Table 7 about here

None of the discontinuity factors precludes entry into first jobs appropriate to educational preparation. Those who take longer to finish schooling (and who are older) do not benefit significantly from this factor alone; our expectation is unsupported, despite the positive sign on the coefficient for DURED. One unexpected finding is the rather large net effect of college attendance. For men of equal schooling, attendance duration, etc., the holder of a college degree (or having obtained post-secondary education in college vs. some non-regular school) takes a higher

status first job. Concretely, if two men, otherwise matched, with one year of post-secondary education (certification credits equal one year) enter the labor market in the same year, the one having attended college for one year's credit will obtain a first job about 9 SEI points higher in status than the other, who attended vocational school for the equivalent of one year's academic credit. We interpret this result in light of the previous finding for the effect of non-regular school attendance on educational achievement. Apparently, otherwise able young men who choose to go on to non-regular post-secondary schools rather than colleges suffer a career cost, both in terms of fewer certification years of schooling for equal attendance years and in the form of a lower status entry point into the full-time labor force.

The second socioeconomic status, occupational level in 1972, should reflect no direct influences from socioeconomic background, inasmuch as all these block one factors will affect levels of aspiration, and education only. In fact, extant knowledge of socioeconomic careers (Featherman, 1971a, 1973; Kelley, 1973) leads us to anticipate that only first job and education will exert significant, positive influences on OCC. Since prior research has omitted timing variables, we amend these expectations to include a small, negative coefficient for the impact of DURED, controlling for the discontinuities and prior variables. As in the regressions for FJOB, DURED indexes something akin to age at entry into the full-time labor force after completion of all schooling. Therefore, in the regressions (row 2) of Table 7, DURED is interpretable as the inverse of labor force tenure: longer DURED implies shorter tenure, ceteris paribus, shorter tenure limits occupational achievement.

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Table 7 (row 2) replicates prior findings regarding the primary import of education and first job in shaping the course of occupational achievement over the early career. An additional year of schooling is about equal in force to an increment in first job status of five SEI points, both yielding a rise of roughly 2.3 SEI points in OCC. Indeed, education channels nearly all of the causal influence of socioeconomic background and educability into OCC. However, OAS does affect OCC directly, over and above the 46% of its causal effect which operates through education, type of post-secondary schooling, and educational discontinuities. Apparently OAS has predictive validity for net achievement in middle career which it does not have for early attainments (e.g. FJOB).[11] Finally, our expectation for a net negative influence of DURED is not confirmed, although the statistically nonsignificant coefficient is in the predicted direction.

Lastly, we examine the causal influences on earnings. Previous status attainment research has not produced equations capable of explaining income; we do not break with tradition. In row 3 regressions of Table 7 we explain 10.5% of the variance in earnings (INC) and in row 4, we account for 13.5% of logged earnings (LNINC). We had anticipated positive coefficients for each of OCC and EDTOT (Featherman, 1971a, 1973; Kelley, 1973). Moreover, we extrapolated from Cutright's (1972) interpretation of a net negative effect of military service on earnings to a negative effect for DURED, controlling for discontinuities, educational level, and prior factors. If, as Cutright suggested, military service removes the inductee from the civilian labor force for the duration, then veterans suffer the handicap of lower tenure, and commensurately lower earnings, within equivalent occupations to those of non-veterans.

For neither INC nor LNINC are there any causal effects for socio-economic background factors (reduced-form coefficient not shown in Table 7). While educability generally does not influence earnings, age-grade retardation does have a net negative effect, for reasons not altogether clear. From row 3, we see that being age-grade retarded at age 17 costs a man $2440 in earnings at age 31-32, net of all other factors, including education and occupational achievements. In fact education has no direct impact on earnings, (the reduced-form coefficients, while not shown, also are non-significant) and OCC has a small positive effect on LNINC but not on INC. Our prediction about DURED was wrong, the coefficient is nonsignificant and positive, not negative.

We would speculate a bit on our non-findings and surprises about income. The cost of age-grade retardation, lagged in effect (the only significant effect for AGRTD in our tables) until mid-career, could represent behavioral disabilities (e.g. lack of punctuality, absenteeism) which negatively influence teachers as well as employers; whatever, AGRTD is not a manifestation of educability, as this is tapped by MA and GPA. DURED has no apparent effect on earnings, but whether this implies the same for tenure is unclear from our analysis. Both of the schooling discontinuities, DPHS and PHSI, like AGRTD, have negative influences on INC and LNINC, although their coefficients are not significant by our strict criterion. Note, however, that each discontinuity costs (net) over a thousand dollars in earnings (row 3 regressions). Perhaps tenure per se is not as important as continuity in schooling; perhaps those who go through without interruption (and without retardation) are those whose personalities are most valued by employers. For example, they may be more punctual, better planners, more efficient,

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more persistent, more compliant, and less distracted; these traits may well be related to efficient progress through school and to lower "training costs" on the job; but maybe they are not. Surely our non-findings encourage further work, but we would argue strongly for the inclusion of timing or discontinuity variables in future research on the socioeconomic life cycle.

In this paper we have identified three discontinuities in schooling which influence other events in the socioeconomic life cycle. These discontinuities arise virtually independently of the socioeconomic origins and other family characteristics of young men. Especially in the instances of delays and interruptions in post-secondary education, experiences of discontinuity of schooling are random shocks in the life cycle, and whether one proceeds through school continuously or not appears to be a matter of "luck." That is, whatever causes discontinuities apparently is not measured well by variables in our causal model.

Despite our inability to account for retardation, delays, and interruption in schooling, we observe in these discontinuities events in the structure of the life cycle which increase inequality of achievement (i.e. enlarge, primarily, the variation in education in the cohort, but also affect occupational status and income as well) without altering opportunity for achievement (i.e. the stratification correlation between fathers' and sons' occupations) in the population.[12] Discontinuities in schooling handicap a man who experiences them because the socioeconomic life cycle in the U.S. is organized to process cohorts; the school, the economy, and society gain a certain operational efficiency from the relatively homogeneous experiences within the cohort. Apparently, all societies recognize a series

of life stages which constitute the life cycle, although cultural variations in the number of such stages and the degrees of continuity of behavior (e.g. role discontinuities and conflicts) across them do abound (Benedict, 1938). Every culture, however, organizes its institutions of socialization according to its conception of the life cycle. In our own industrial society, there are sociologically rational connections between schools and the labor market, it would be surprising were we not to observe socioeconomic costs imposed on those who violate implicit age-specific behavioral norms which underlie the structure of education and which govern the transition from school to work.[13]

A spin-off from our major inquiry was the finding that college and non-regular post-secondary education (e.g. vocational, technical, business, apprenticeship training) are not substitutable in the process of achievement. For young men intellectually and financially able to undertake post-secondary schooling, college offers more certification (credit) for equal periods of attendance than do non-regular schools, and having attended college vs. (say) vocational school enables the young man to begin full-time labor force attachment in jobs of higher social standing. Whether the benefit of college attendance (or the non-benefit of non-regular schooling) signals non-intellectual returns to education in the form of personality traits and interpersonal styles which are marketable upon labor force entry, or whether these returns to college attendance (net years of school completed) represent other factors, such as employer discriminations in favor of collegians, we cannot ascertain in our data. However, in closing we would repeat an interpretation of these findings offered by another.[14] Our data lend no support to policies which would divert scholarships from colleges and college

attenders to share these scarce resources with vocational, technical institutes and their metriculants. Insofar as the rationale for public support of the education of able individuals is lodged in the quality of the labor force and personal mobility, our data depict two- and four-year college (universities) as more effective at these tasks. Of course, our work was not designed to explore these issues, and our observations remain most tentative.

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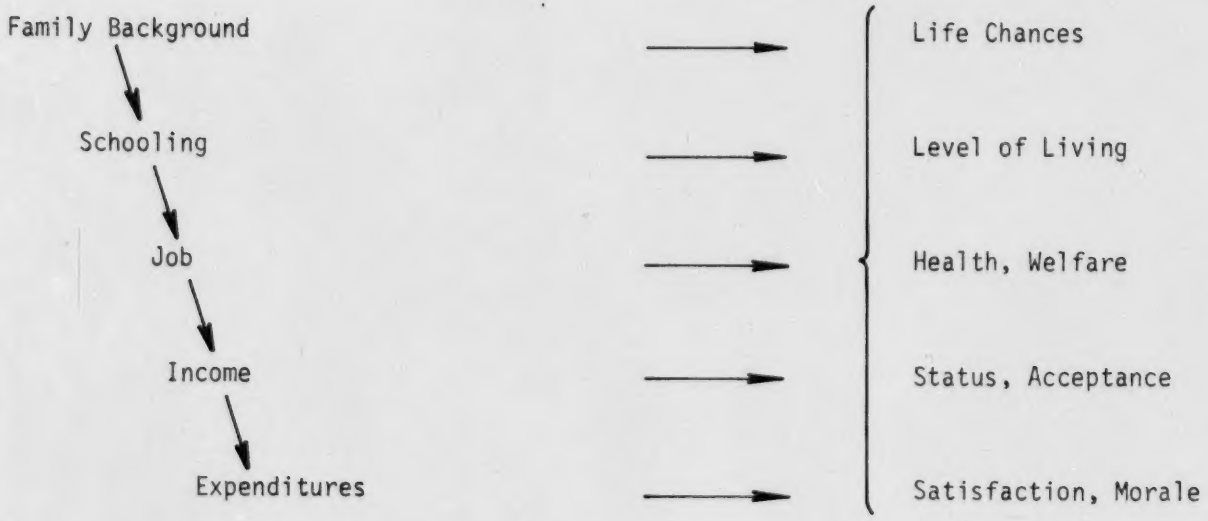

Figure 1.

The Socioeconomic Life Cycle: Schematic Representation
(Source: Duncan, 1967:87)

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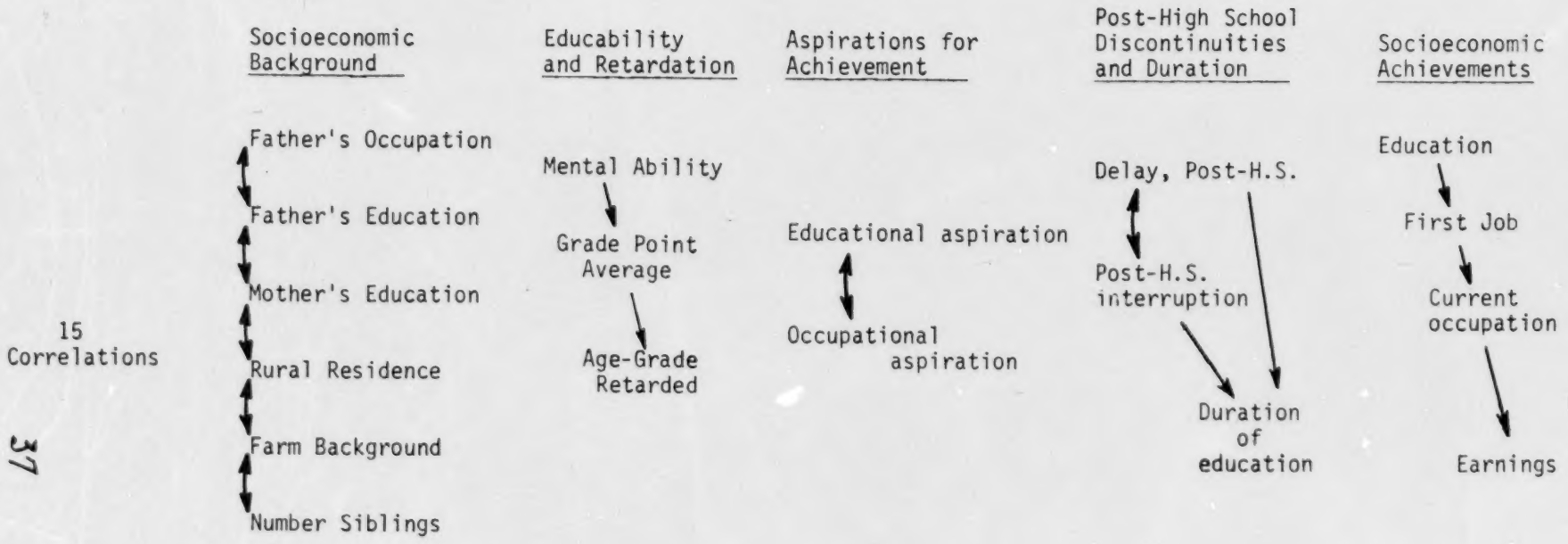

Figure 2.

Causal scheme ordering events within the socioeconomic life cycle

(Note: Curved lines denote correlation, no causal priorities assumed; straight arrows denote causal ordering within a block of variables; otherwise, the causal specification is fully recursive between and within blocks.)

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Table 1: Distribution of Educational Discontinuities by Type of Post-High School Education

	AGRTD				AGRTD				
	DPHS		NO DPHS		DPHS		NO DPHS		
	PHSI	NO PHSI	PHSI	NO PHSI	PHSI	NO PHSI	PHSI	NO PHSI	
COLLEGE	1	0	1	1	8	11	39	55	116
COLL & NREG	0	0	0	0	3	2	15	7	27
NON-REG	0	4	0	1	5	32	1	14	57
NO PHS ED	-0-	-0-	-0-	24	-0-	-0-	-0-	116	140
	1	4	1	26	16	45	55	192	340

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Table 2: Multiple regressions of educability and school retardation variables on causally prior factors

Dependent Variables	Independent Variables FAOCC	FAED	MOED	RURAL	FARM	SIBS	MA	GPA	R^2	α
	Path coefficients[a] (standardized regression coefficients									
1. MA	.051	.054	.185*	-.110	-.061	-.110*				
	(.069)	(.066)	(.063)	(.058)	(.061)	(.053)				
2. GPA	.159*	.049	.201*	-.046	.049	-.036				
	(.068)	(.066)	(.063)	(.057)	(.061)	(.053)				
3. GPA	.138*	.026	.123*	.001	.075	.011	.425*			
	(.062)	(.060)	(.058)	(.052)	(.055)	(.049)	(.050)			
4. AGRTD	-.093	-.037	-.141*	.000	-.025	.029				
	(.071)	(.069)	(.065)	(.060)	(.063)	(.055)				
5. AGRTD	-.083	-.026	-.104	-.022	-.037	.007	-.199*			
	(.070)	(.068)	(.065)	(.059)	(.062)	(.055)	(.056)			
6. AGRTD	-.051	-.020	-.076	-.021	-.020	.010	-.101	-.231*		
	(.069)	(.067)	(.064)	(.058)	(.061)	(.054)	.061	(.061)		
	Regression coefficients									
1. MA	.012	.209	.736*	-1.19	-.798	-.231*			.120	45.50
2. GPA	.006*	.030	.129*	-.080	.104	-.012			.121	-1.84
3. GPA	.005*	.016	.079*	.002	.159	.004	.069*		.280	-4.96
4. AGRTD	-.001	-.008	-.031*	.000	-.018	.003			.050	.821
5. AGRTD	-.001	-.006	-.023	-.013	-.027	.001	-.011*		.085	1.33
6. AGRTD	-.001	-.004	-.017	-.013	-.014	.001	-.006	-.080*	.124	.456

[a]Standard errors in parentheses. Asterisk indicates absolute size of coefficient equals or exceeds twice its standard error.

Table 3: Multiple regressions of achievement aspirations on causally prior factors

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Dependent Variables	Independent Variables: FAOCC	FAED	MOED	RURAL	FARM	SIBS	MA	GPA	AGRTD	R^2	α
Path coefficients[a] (standardized regression coefficients)											
1. EASP	.161*	.111	.227*	-.166*	.089	-.041					
	(.064)	(.063)	(.059)	(.054)	(.057)	(.050)					
2. EASP	.146*	.094	.172*	-.133*	.107*	-.008	.300*				
	(.061)	(.059)	(.057)	(.052)	(.054)	(.048)	(.049)				
3. EASP	.084	.083	.116*	-.133*	.073	-.013	.108*	.451*			
	(.055)	(.053)	(.051)	(.046)	(.048)	(.043)	(.048)	(.048)			
4. EASP	.082	.082	.113*	-.134*	.073	-.013	.104*	.441*	-.040		
	(.055)	(.053)	(.051)	(.046)	(.048)	(.043)	(.048)	(.049)	(.044)		
5. OAS	.090	.162*	.218*	-.088	-.055	-.051					
	(.066)	(.064)	(.060)	(.055)	(.058)	(.051)					
6. OAS	.072	.143*	.153*	-.049	-.034	-.013	.352*				
	(.061)	(.059)	(.057)	(.052)	(.054)	(.048)	(.049)				
7. OAS	.019	.133*	.106*	-.050	-.062	-.017	.187*	.386*			
	(.057)	(.055)	(.053)	(.048)	(.050)	(.044)	(.050)	(.050)			
8. OAS	.015	.131*	.100	-.051	-.064	-.016	.180*	.369*	-.073		
	(.057)	(.055)	(.053)	(.047)	(.050)	(.044)	(.050)	(.051)	(.045)		
Regression coefficients											
1. EASP	.009*	.101	.251*	-.428*	.278	-.021				.221	-8.69
2. EASP	.008*	.087	.163*	-.343*	.335*	-.004	.071*			.300	-11.9
3. EASP	.005	.076	.110*	-.344*	.230	-.007	.026*	.665*		.446	-1.41
4. EASP	.005	.075	.107*	-.346*	.227	-.006	.025*	.651*	-.171	.447	-1.08
5. OAS	.053	1.53*	2.14*	-2.35	-1.78	-.266				.192	86.3
6. OAS	.042	1.35*	1.50*	-1.32	-1.09	-.066	.865*			.301	47.0
7. OAS	.011	1.26*	1.04*	-1.33	-2.02	-.088	.461*	5.88*		.408	17.0
8. OAS	.009	1.24*	.983	-1.37	-2.07	-.085	.443*	5.63*	-3.20	.413	11.8

[a]Standard errors in parentheses. Asterisk indicates absolute size of coefficient equals or exceeds twice its standard error.

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Table 4: Multiple regressions of post-high school education discontinuities and duration of school attendance on causally prior factors

Dependent Variables		Independent Variables														R^2	α
		FAOCC	FAED	MOED	RURAL	FARM	SIBS	MA	GPA	AGRTD	EASP	OAS	NREG	COLTN	PHSI	DPHS		
Path Coefficients[a] (Standardized regression coefficients)																		
1.	DPHS	-.120	.044	-.032	.000	.011	.005											
		(.072)	(.070)	(.067)	(.061)	(.064)	(.057)											
2.	DPHS	-.106	.055	-.014	-.016	.020	.004	.023	-.024	-.066	-.097	-.022						
		(.074)	(.071)	(.069)	(.062)	(.065)	(.057)	(.066)	(.074)	(.058)	(.084)	(.082)						
3.	DPHS	-.092	.076	-.052	-.026	-.045	.007	.018	-.085	-.026	-.069	-.055	.525*	.150*				
		(.063)	(.061)	(.059)	(.053)	(.056)	(.049)	(.056)	(.064)	(.050)	(.079)	(.071)	(.048)	(.070)				
4.	PHSI	.119	.036	.195*	-.063	.055	.062											
		(.070)	(.068)	(.064)	(.059)	(.062)	(.054)											
5.	PHSI	.077	.020	.132*	-.043	.048	.079	.078	.257*	.021								
		(.068)	(.065)	(.063)	(.057)	(.060)	(.053)	(.060)	(.061)	(.054)								
6.	PHSI	.053	-.011	.095	-.003	.031	.083	.038	.113	.037	.278*	.059						
		(.066)	(.064)	(.062)	(.056)	(.059)	(.051)	(.059)	(.067)	(.053)	(.076)	(.073)						
7.	PHSI	.038	-.004	.082	-.006	.009	.082	.013	.029	.031	.086	-.035	.167*	.418*				
		(.061)	(.059)	(.057)	(.051)	(.054)	(.047)	(.055)	(.062)	(.049)	(.077)	(.069)	(.047)	(.068)				
8.	DURED	-.109	.021	.056	-.020	.032	.012	-.005	.196*	-.040	.226*	.112						
		(.065)	(.063)	(.061)	(.055)	(.058)	(.051)	(.058)	(.066)	(.052)	(.075)	(.072)						
9.	DURED	-.083	-.001	.022	-.011	.010	-.025	-.032	.159*	-.025	.153*	.097						
		(.046)	(.044)	(.043)	(.038)	(.040)	(.053)	(.041)	(.046)	(.036)	(.053)	(.051)			.427*	.469*		
10.	DURED	-.098*	.019	.010	-.020	-.022	-.012	-.044	.088*	-.021	.044	.020	.306*	.412*	(.038)	(.034)		
		(.039)	(.037)	(.036)	(.032)	(.034)	(.030)	(.034)	(.039)	(.031)	(.049)	(.043)	(.035)	(.046)	.285*	.310*		
															(.035)	(.034)		
Regression Coefficients																		
1.	DPHS	-.002	.013	-.010	.000	.012	.001										.015	-.109
2.	DPHS	-.002	.016	-.004	-.013	.020	.001	.002	-.012	-.091	-.031	-.001					.028	-.436
3.	DPHS	-.002	.023	-.016	-.022	-.046	.001	.001	-.040	-.036	-.022	-.002	.484*	.121*			.292	.252
4.	PHSI	.002	.011	.062*	-.055	.058	.010										.085	-1.91
5.	PHSI	.001	.006	.042*	-.037	.050	.013	.006	.127*	.030							.160	-.354
6.	PHSI	.001	-.003	.030	-.002	.033	.014	.003	.056	.052	.093*	.002					.214	-1.47
7.	PHSI	.001	-.001	.026	-.005	.009	.014	.001	.014	.044	.029	-.001	.160*	.405*			.336	-.129
8.	DURED	-.022	.068	.190	-.182	.363	.022	-.004	1.03*	-.609	.809*	.039					.234	-13.7
9.	DURED	-.017	-.002	.074	-.102	.110	-.045	-.027	.840*	-.378	.548*	.033			4.55*	5.19*	.630	-.731
10.	DURED	-.020*	.063	.034	-.186	-.246	-.022	-.037	.463*	-.320	.155	.007	3.12*	3.70*	3.04*	3.43*	.738	.263

[a]Standard errors in parentheses. Asterisk indicates absolute size of coefficient equals or exceeds twice its standard error.

Table 5: Multiple regressions for two types of post-secondary training

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Dependent Variables	Independent Variables													R^2	α
	FAOCC	FAED	MOED	RURAL	FARM	SIBS	MA	GPA	AGRTD	EASP	OAS	PHSI	DPHS		
Path coefficients[a] (standardized regression coefficients)															
1. NREG	.007	-.065	.067	.028	.109*	-.020	-.023	.072	-.060	-.171*	.014	.115*	.493*		
	(.062)	(.060)	(.058)	(.052)	(.055)	(.048)	(.055)	(.063)	(.049)	(.073)	(.069)	(.052)	(.047)		
2. COLTN	.033	.000	-.021	.002	-.004	-.017	.046	.120*	.035	.393*	.177*	.259*	.020		
	(.047)	(.045)	(.044)	(.039)	(.041)	(.036)	(.042)	(.047)	(.037)	(.055)	(.052)	(.039)	(.035)		
Regression coefficients															
1. NREG	.000	-.021	.022	.025	.120*	-.003	-.002	.037	-.089	-.060*	.000	.121*	.535*	.313	.091
2. COLTN	.001	.000	-.008	.002	-.005	-.003	.004	.071*	.059	.157*	.007*	.307*	.025	.613	-.330

[a]Standard errors in parentheses. Asterisk indicates absolute size of coefficient equals or exceeds twice its standard error.

Table 6: Multiple regressions of educational achievement on causally prior factors

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Dependent Variables	Independent Variables																
	FAOCC	FAED	MOED	RURAL	FARM	SIBS	MA	GPA	AGRTD	EASP	OAS	PHSI	DPHS	NREG	COLTN	DURED	R^2	α
Path coefficients[a] (standardized regression coefficients)																		
1. EDTOT	.126*	.127*	.213*	-.176*	.098	-.103*												
	(.064)	(.062)	(.059)	(.054)	(.057)	(.050)												
2. EDTOT	.040	.097	.093	-.143*	.079	-.075	.095*	.475*	-.051									
	(.053)	(.051)	(.049)	(.045)	(.047)	(.041)	(.047)	(.048)	(.042)									
3. EDTOT	.013	.046	.039	-.093*	.070	-.067	.028	.269*	-.024	.304*	.197*							
	(.048)	(.046)	(.045)	(.040)	(.042)	(.037)	(.043)	(.048)	(.038)	(.055)	(.053)							
4. EDTOT	.003	.048	.019	-.092*	.063	-.085*	.019	.245*	-.031	.246*	.185*	.213*	.012					
	(.046)	(.044)	(.043)	(.039)	(.041)	(.036)	(.041)	(.046)	(.036)	(.054)	(.051)	(.038)	(.035)					
5. EDTOT	.043	.040	.019	-.083*	.072*	-.072*	.026	.149*	-.031	.078	.106*	-.044	-.181*	-.127*	.161*	.583*		
	(.038)	(.036)	(.035)	(.031)	(.033)	(.029)	(.033)	(.038)	(.030)	(.047)	(.042)	(.037)	(.037)	(.037)	(.050)	(.054)		
Regression coefficients																		
1. EDTOT	.014*	.229*	.397*	-.892*	.605	-.102*												
2. EDTOT	.004	.174	.173	-.728*	.490	-.074	.044*	1.38*	-.424								.228	-7.32
3. EDTOT	.001	.083	.072	-.470*	.413	-.067	.013	.779*	-.202	.597*	.037*						.484	9.47
4. EDTOT	.000	.086	.035	-.467*	.389	-.084*	.009	.710*	-.261	.483*	.035*	1.25*	.071				.591	-6.29
5. EDTOT	.005	.072	.035	-.420*	.445*	-.071*	.012	.432*	-.259	.154	.020*	-.257	-1.10*	-.714*	.793*	.296*	.628	9.79
																	.758	8.68

[a]Standard errors in parentheses. Asterisk indicates absolute size of coefficient equals or exceeds twice its standard error.

Table 7: Multiple regressions of occupational and economic achievements on causally prior factors

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pendent riables	Independent Variables FAOCC	FAED	MOED	RURAL	FARM	SIBS	MA	GPA	AGRTD	EASP	OAS	PHSI	DPHS	NREG	COLTN	DURED	EDTOT	FJOB	OCC	R^2	α
									Path coefficients[a] (Standardized regression coefficients)												
FJOB	.050	.053	-.096*	-.101*	-.048	-.017	.040	.125*	-.011	.014	.056	-.013	.049	.037	.169*	.058	.414*				
	(.047)	(.045)	(.043)	(.039)	(.042)	(.036)	(.042)	(.049)	(.037)	(.059)	(.053)	(.046)	(.047)	(.047)	(.063)	(.077)	(.070)				
OCC	.043	-.069	.008	-.015	-.010	.034	-.027	.077	-.027	.012	.145*	-.037	.041	-.003	.043	-.095	.219*	.490*			
	(.048)	(.046)	(.045)	(.041)	(.043)	(.037)	(.043)	(.051)	(.038)	(.060)	(.054)	(.047)	(.049)	(.049)	(.065)	(.079)	(.075)	(.057)			
INC	.084	.085	.037	.074	.023	-.068	-.013	-.080	-.102	.088	-.027	-.086	-.064	.093	-.007	.033	.050	.076	.062		
	(.073)	(.070)	(.068)	(.062)	(.064)	(.056)	(.064)	(.077)	(.057)	(.091)	(.083)	(.072)	(.073)	(.073)	(.099)	(.119)	(.115)	(.096)	(.084)		
LNINC	.078	.044	.095	.099	.032	-.057	.003	-.118	-.111*	-.002	-.015	-.075	-.097	.016	.031	.138	-.043	.099	.176*		
	(.072)	(.069)	(.066)	(.061)	(.063)	(.055)	(.063)	(.075)	(.056)	(.089)	(.081)	(.070)	(.072)	(.072)	(.097)	(.117)	(.113)	(.094)	(.083)		
									Regression coefficients												
FJOB	.060	1.04	-1.94*	-5.57*	-3.19	-.186	.202	3.91*	-.968	.292	.116	-.828	3.25	2.22	9.00*	.346	4.48*			.623	3.92
OCC	.049	-1.28	.155	-.771	-.660	.343	-.128	2.31	-2.28	.232	.284*	-2.26	2.58	-.201	2.20	-.538	2.26*	.467*		.607	9.08
INC[b]	.267	4.36	1.95	10.80	3.98	-1.93	-.169	-6.60	-24.40	4.96	-.149	-14.50	-11.10	14.90	-.992	.522	1.42	.202	.172	.105	-28.40
LNINC	.002	.016	.035	.099	.039	-.011	.000	-.067	-.184*	-.001	-.001	-.087	-.116	.017	.031	.015	-.009	.002	.003*	.135	7.75

[a]Standard errors in parentheses. Asterisk indicates absolute size of coefficient equals or exceeds twice its standard error.

[b]Income in 100-dollar units, for convenience of presentation.

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Table A-1: Correlation Matrix from Lenawee County, Michigan Data on Respondents Interviewed During Follow-up: Spring, 1972 (N = 340)*

Variables	INC	LNINC	OCC	FJOB	EDTOT	DURED	COLTN	NREG	DPHS	DPSI	OAS	EASP	AGRTD	GPA	FAOCC	FAED	MOED	MA	RURAL	FARM	SIBS
Income	--																				
In Income	86	--																			
Occupational SEI	18	26	--																		
First Job SEI	20	25	74	--																	
Total Education	20	24	66	74	--																
Duration of Education	13	17	41	54	64	--															
College Training	15	21	58	66	75	58	--														
Non-Regular Schooling	06	03	-05	02	-03	44	-12	--													
Delay in Post-High School Education	-02	-03	-02	04	-05	46	-05	52	--												
Post-High School School Interruption	06	10	32	41	50	59	54	10	04	--											
Occupational Aspiration	16	19	57	56	63	38	62	-08	-09	35	--										
Educational Aspiration	19	19	55	59	69	43	71	-12	-12	43	70	--									
Age-Grade Retardation	-17	-19	-25	-25	-28	-19	-20	-06	-02	-12	-28	-26	--								
High School Grade Point Average	13	14	54	57	63	40	56	-01	-08	35	56	60	-32	--							
Father's Occupational SEI	16	16	31	34	30	07	29	-12	-12	19	30	32	-15	25	--						
Father's Education	20	19	24	31	35	17	29	-05	-03	20	35	35	-16	25	46	--					
Mother's Education	18	21	24	25	37	22	31	02	-05	25	35	37	-20	30	32	55	--				
Mental Ability	10	12	36	41	43	24	41	-04	-04	24	46	41	-24	48	23	22	26	--			
Rural Residence	-02	-01	-26	-31	-25	-08	-20	11	05	-11	-20	-25	05	-13	-39	-18	-12	-19	--		
Farm Background	01	01	-11	-12	-00	06	-05	15	06	00	-11	-02	00	-02	-42	-00	08	-11	35	--	
Size of Sibship	-14	-13	-13	-18	-22	-06	-14	01	03	-02	-16	-16	09	-13	-21	-20	-21	-19	11	04	--
$\bar{x}$'s	12890.	9.35	47.1	39.6	13.7	3.95	.426	.255	.202	.223	36.9	1.17	.094	2.09	32.7	2.27	2.60	21.0	.638	.195	3.76
S.D.'s	6994.	.483	25.2	26.4	2.45	4.45	.495	.437	.402	.417	12.9	1.24	.292	.843	22.1	1.36	1.31	5.23	.481	.397	2.48

*Decimals omitted in correlation matrix.

FOOTNOTES

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[1]For an appreciation of the impact of cohort and historical (period) forces within the contemporary scene, see Moynihan (1973).

[2]We distinguish discontinuities from career contingencies. The latter events include marriage, divorce, childspacing (cf. Duncan, Featherman, and Duncan, 1972:Chapter 8), while the former focus upon the timing of such events within the life cycle. Both, however, can differentiate the experiences of the birth cohort, as at any one time some members of the cohort are married while others are not; some who are married were married before completing education while others were married later.

[3]If Beverly Duncan (1965a) is correct in reporting a positive relationship between the unemployment rate and school enrollment rates, discrepancies in dropping out and returning will appear in studies conducted in different years and market conditions.

[4]Paternal and maternal educations were coded in units of completed formal schooling: 0=less than eighth grade; 1=8 grades; 2=9-11 grades; 3=12 grades; 4=some college; 5=college degree or more.

[5]Educational aspirations were given in post-secondary college years planned by the seventeen-year-old boys: 0=none; 1=2 or fewer years; 2=3 or 4 years; 3=5 or 6 years; 4=7 or more years.

[6]While the regression coefficient for AGRTD is not significant by our criterion, its impact on EASP is about the same (in metric terms) as having a mother with some high school rather than a high school diploma.

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[7]It is premature to argue too strongly for the inclusion of maternal education in models of status attainment applied to more general populations than ours. Were we to extract from Sewell's Wisconsin sample of high school seniors those reared in counties like Lenawee County, Michigan, perhaps we would replicate our findings. Quite possibly, maternal education is more important for boys in less urban samples than for those in state- and nation-wide samples. We are exploring the possibilities for such an interaction.

[8]The average length of DPHS was 5.8 years; mean length of PHSI was 3.45 years.

[9]The categories NREG and COLTN are not mutually exclusive (see Table 1) as we have defined them, although their correlation $r = -0.12$ indicates that so few men undertook both types of post-secondary education that they essentially are orthogonal. Were NREG and COLTN mutually exclusive, then the third and omitted category would be those not having post-high school training of any kind.

[10]We translated two years of NREG attendance and course completion as equivalent to one year of formal school (academic) credit.

[11]An occasional critic of Duncan-style stratification research takes issue with the "redundance" of first job in the equation for current job. Here, OAS operates quite differently with respect to each occupation, giving notice to the qualitative difference in status attainments at different points in the socioeconomic career.

[12]Take the following two structural equations,

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$$Y = b_{YX}X + b_{YU}U + b_{Yu}u$$

$$U = b_{UX}X + b_{Ux}x,$$

where X=father's occupation, U=son's education, and Y=son's occupation. According to the basic theorem of path analysis (Duncan, 1966) we can write the stratification correlation as follows:

$$r_{YX} = p_{YX} + p_{YU}r_{UX},$$

which can be rewritten in terms of path regressions and ratios of standard deviations:

$$r_{YX} = b_{YX\cdot U}\left(\frac{S_X}{S_Y}\right) + b_{YU\cdot X}\left(\frac{S_U}{S_Y}\right) b_{UX}\left(\frac{S_X}{S_U}\right),$$

$$= b_{YX\cdot U}\left(\frac{S_X}{S_Y}\right) + b_{YU\cdot X}b_{UX}\left(\frac{S_X}{S_Y}\right),$$

$$= \frac{S_X}{S_Y}\left(b_{YX\cdot U} + b_{YU\cdot X}b_{UX}\right).$$

Increasing the variance in education (S_U^2) does not alter the degree of opportunity for achievement, r_{YX}, ceteris paribus. Were r_{UX} to increase, of course r_{YX} would also, ceteris paribus. However, in our data educational discontinuities virtually are uncorrelated with family factors, so that they do not enter into the relationship between X and U, while they do affect S_U.

[13]Cutright's (1972) analysis of earnings profiles for veterans and nonveterans illustrates these costs, as does our own. We plan to extend our inquiry of life cycle discontinuities to include females as well as males. Clearly a substantial minority of women interrupt or delay their schooling owing to marriage and childbearing (Davis, 1973). Whether the costs of discontinuities in the life cycle as imposed on men are also imposed on women we can only speculate.

[14]We thank Bill Sewell for this observation.

REFERENCES

BEST COPY AVAILABLE

Benedict, R.

1938 "Continuities and discontinuities in cultural conditioning." Psychiatry 1 (May): 161-167.

Blau, P. M. and O. D. Duncan

1967 The American Occupational Structure. New York: Wiley.

Carter, N.

1972 The effects of sex and marital status on a social-psychological model of occupational status attainment. Unpublished master's thesis. Department of Sociology, University of Wisconsin-Madison.

Carter, T. M., J. S. Picou, E. Curry and G. Tracy

1972 "Black-White differences in occupational mobility: some preliminary explanations." Paper presented at the annual meetings of the American Sociological Association, New Orleans, La.

Cutright, P.

1972 Achievement, mobility, and the draft: their impact on the earnings of men. Staff Paper No. 14, U. S. Department of Health, Education and Welfare, Social Security Administration, Office of Research and Statistics, Washington, D.C.

Davis, N.

1973 The continuation of education after marriage among United States women: 1970. Unpublished master's thesis, Department of Sociology, University of Wisconsin-Madison.

Duncan, B.

1965a "Dropouts and the unemployed." Journal of Political Economy 53 (April): 121-134.

Duncan, B.

1965b Family factors and school dropout: 1920-1960. Final Report, Cooperative Research Project No. 2258, U. S. Office of Education, Ann Arbor, Michigan: The University of Michigan.

1967 "Early work experience of graduates and dropouts." Demography 4:19-29.

1968 "Trends in output and distribution of schooling." Pp. 601-672 in E. Sheldon and W. Moore (eds.) Indicators of Social Change. New York: Russell Sage.

Duncan. O. D.

1961 "A socioeconomic index for all occupations." Pp. 109-137 in A. J. Reiss, Occupations and Social Status. New York: Free Press.

1967 "Discrimination against Negroes." Annals of the American Academy of Political and Social Science, 371 (May):85-103.

Duncan, O.D., D. L. Featherman, and B. Duncan

1972 Socioeconomic Background and Achievement. New York: Seminar Press.

Ellis, R. A. and W. C. Lane

1963 "Structural supports for upward mobility." ASR 28:743-756.

Featherman, D. L.

1971a "A research note: a social structural model for the socio-economic career." AJS 77 (September):293-304.

1971b "Residential background and socioeconomic achievements in metropolitan stratification systems." Rural Sociology 36 (June):107-124.

1973 "Comments on models for the socioeconomic career." ASR 38 (December): forthcoming.

BEST COPY AVAILABLE

Haller, A. O.

1968 "Education and occupational achievement process." Pp. 149-169 in President's National Advisory Commission on Rural Poverty, Rural Poverty in the United States. Washington, D.C.: U.S. Government Printing Office.

Haller, A. O. and I. W. Miller

1971 The Occupational Aspiration Scale. Cambridge, Mass.: Schenkman.

Hauser, R. M.

1973 "Disaggregating a social-psychological model of educational attainment." Pp. 255-284 in A. S. Goldberger and O. D. Duncan (eds.) Structural Equation Models in the Social Sciences. New York: Seminar Press.

Kelly, J.

1973 "Causal chain models for the socioeconomic career." ASR 38 (August):481-493.

Moynihan, D. P.

1973 "'Peace' - some thoughts on the 1960s and 1970s." The Public Interest (Summer):3-12.

Ornstein, M. D.

1971 "Entry into the American labor force." Unpublished paper, report no. 113, Center for Social Organization in Schools, The Johns Hopkins University, Baltimore, Md.

Otto, L. B.

1973 Early career alienation and socioeconomic attainments of a rural population. Unpublished Ph.D. dissertation. Department of Sociology. University of Wisconsin-Madison.

Ryder, N. B.

1964 "Notes on the concept of a population." American Journal of Sociology 69 (March):447-463.

1965 "The cohort as a concept in the study of social change." ASR 30 (December):843-861.

Sewell, W. H., A. O. Haller and A. Portes

1969 "The educational and early occupational attainment process." ASR 34 (February):82-92.

Sewell, W. H., A. O. Haller and G. Ohlendorf

1970 "The educational and early occupational attainment process: replication and revision." ASR 35 (December):1014-1027.

Sewell, W. H. and R. M. Hauser

1972 "Causes and consequences of higher education: models of the status attainment process." American Journal of Agricultural Economics 54 (December):851-861.